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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO.
09 729,069	12 04 2000	Nicolas Nagel	GR 99 P 5374	6450

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EXAMINER

VU, DAVID

ART UNIT	PAPER NUMBER
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2818

DATE MAILED: 07/31/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/729,069

Applicant(s)

NAGEL ET AL.

Examiner

DAVID VU

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☐ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 18-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 04 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s) _____   |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)            | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>8</u> | 6) <input type="checkbox"/> Other:  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Summerfelt et al. (US 5,612,574).

In re claims 1-17, Summerfelt et al., in related text (Col. 3, Line. 18-Col. 4, Line. 30) and figures (Fig. 2) disclose a microelectronic structure, comprising: a base substrate18 at least partly composed of an insulating material and formed with an opening; opening completely penetrating through insulating material18; at least one conductive material20 filling opening and terminating flush with insulating material18; a metal silicide layer 26 disposed over opening and directly on base substrate18; a barrier layer22 disposed above metal silicide layer26, barrier layer22 including an oxygen-containing iridium layer; (Col. 3, Lines. 61-Col. 4, Line. 11); an adhesion layer26 disposed directly between metal silicide layer and barrier layer22; adhesion layer26 containing at least one material selected from the group consisting of titanium, tantalum, ruthenium or other suitable material (Col. 4, Lines. 28-29), and a noble metal layer24 disposed on barrier layer22.

In re claim 4, wherein insulating material is composed of silicon dioxide and silicon nitride. (Col. 3, Lines. 18-24)

In re claims 5, 7 and 10, wherein at least one barrier layer includes an oxygen barrier layer; and a metal-containing electrode layer covers oxygen barrier layer. (Col. 3, Lines. 61-Col. 4, Line. 11)

In re claims 12-14, wherein at least one metal silicide contains at least one silicide selected from the group consisting of titanium silicide, tantalum silicide, tungsten silicide, nickel silicide (Col. 3, Lines. 36-41)

In re claim 15, including a metal-oxide-containing layer covering metal-containing electrode layer 24, metal-oxide-containing layer being a layer selected from the group consisting of a dielectric metal-oxide-containing layer 28, a ferroelectric metal-oxide-containing layer and a paraelectric metal-oxide-containing layer. (Col. 5, Lines. 17-32)

2. Summerfelt et al does not disclose "oxygen-containing iridium layer being a sputtered layer produceable at a temperature of at least 250°C in an atmosphere containing by volume between 2.5% and 15% of oxygen;" in claims 6 and 16-17. However, the limitation "a sputtered layer produceable at a temperature of at least 250°C in an atmosphere containing by volume between 2.5% and 15% of oxygen;" is taken to be a product by process limitation and consider non-limitation. In a product-by-process claim, it is the patentability of the claimed product and not of the recited process steps which must be established. Therefore, when the prior art discloses a product which reasonably appears to be identical with or only slightly different than the product claimed in a product-by process claim, a rejection based on sections 102 or 103 is fair. The Patent Office is not equipped to manufacture products by a myriad of processes put before it and then obtain prior art product and make physical comparisons therewith. In re

Brown, 173 USPQ 685 (CCPA 1972). Also, a product by process claim directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See In re Fessman, 180 USPQ 324, 326 (CCPA 1974); In re Marosi et al., 218 USPQ 289, 292 (Fed. Cir. 1983); and particularly In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product "gleaned" from the process steps, which must be determined in a "product by process" claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old and obvious product produced by a new method is not a patentable product, whether claimed in "product by process" claims or not.

Note that a "product by process" claim is directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Fessmann, 180 USPQ 324; In re Avery, 186 USPQ 161; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); In re Marosi et al, 218 USPQ 289; and particularly In re Thorpe, 227 USPQ 964, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above case law makes clear.

### **Conclusion**

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Vu whose telephone number is (703) 305-0391. The examiner can normally be reached on Monday-Friday from 8:00am to 5:00pm.

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If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms., can be reached on (703) 308-4910.

DV  
David Vu  
Art Unit 2818

*Hna*  
HOAI HO  
PRIMARY EXAMINER